Cleaning devices for flexible hoses, assemblies and pipes

It is becoming more and more important to protect hydraulic systems against contamination. This increase in care is due to the fact that the systems are more advanced and operate at higher speed and lower allowance. The contamination of hydraulic oil reduces effectiveness of the machine, destabilizes its control, causes frequently occurring defects and break-downs that put the machine out of operation.

DID YOU KNOW THAT

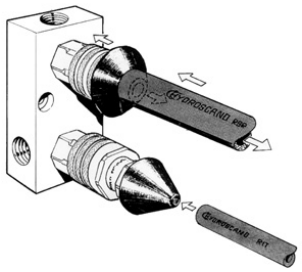
80% OF HYDRAULIC SYSTEM FAULTS ARE CAUSED BY CONTAMINATION ?

The requirements concerning the purity of hydraulic oil are specified by ISO 4406 and American NAS 1638 standard. The standards define cleanliness classes of oil according to the amount of contamination of certain volume - the lower the number defining the class, the cleaner the hydraulic oil.

NAS 1638	00	0	1	2	3	4	5	6	7	8	9	10	11	12
ISO 4406	8/4	9/6	10/7	11/8	12/9	13/10	14/11	15/12	16/13	17/14	18/15	19/16	20/17	21/18

Hydraulic hoses, assemblies and pipes cleaning methods:

- blowing through with compressed air (does not meet any standards, however very useful),
- shooting cleaning projectiles using compressed air,
- slushing.



HY-9036-01-00

MICRO JET 5-50

A simple device designed to clean hoses and pipes with compressed air. There are two plastic nozzles, one is for hoses from 3/16” to 1” and the other for hoses from 1” to 2”. When the hose is pressed against the nozzle the valve opens and makes cleaning possible.
- air pressure: min. 6 bar,
- connection to pneumatic installation: 1/2” BSP.

OP-SC

SPEEDY CLEAN

A machine for cleaning with special purpose detergent solution under pressure. Designed to clean hoses and hose assemblies.
Ensures obtaining cleanliness class: ISO 4406: 16/13, NAS 1638: 8.

- hose diameter range from 1/4” up to 2”,
- electric drive 400 V,
- air-operated 6 bar - 7 l/min,
- container capacity 33 l,
- operation pressure 60 bar,
- weight 90 kg,
- universal Adaptor for hoses from 1/4 “ to 2”.

ULTRACLEAN devices for hose, assembly and pipe cleaning

The ULTRACLEAN device is designed to clean hoses, flexible assemblies and pipes for pressure hydraulics and for other industrial application. Cleaning is carried out by shooting cleaning projectiles through the hose using compressed air.

The application of the devices combined with the ULTRACLEAN cleaning method allows to achieve ISO 13/10 cleanliness class of hydraulic oil.

UC-EL

UC-HLMAX

UC-HL

EL, HL, HLMAX

A manual device for shooting cleaning projectiles.
Diameter range (for hoses):
- EL - 1/8” ÷ 1.1/4”,
- HL - 1/8” ÷ 2”,
- HLMAX - 1/8” ÷ 3.1/2”,

Air-operated about 6 bar (1/2” hose).
Recommended filter 5 µm.
HL, HLMAX are supplied with quick release coupling with a revolving plug. EL is supplied with quick release coupling.

BM-1

A tabletop device for shooting cleaning projectiles.

Diameter range (for hoses):
- BM-1 - 1/8” ÷ 1.1/4”,

Air-operated about 6 bar (1/2” hose).
Efficiency up to 500 assemblies / hour.
Complete with 5 µm filter, foot control and 7 nozzles selected according to customer specification.
The PVS module signalling that the cleaning projectile has left the assembly is also available.

UC-BM-1

ULTRACLEAN devices for hose, assembly and pipe cleaning

Sets with UC-EL device (economical version)

This device allows cleaning of hoses, pipes and assemblies in diameter range from 1/8'' to 1.1/4''. It is equipped with revolving 45° shutting ring that facilitates quick nozzle changing and loading of cleaning projectiles. The inside is made of hardened brass, plastic handle of high mechanical resistance and head and locking ring of anodic treated aluminium.

EL7

Cleaning set consisting of:
- cleaning gun UC-EL,
- quick release coupling with a hose tail DN12 UC-QRC-C,
- 7 standard nozzles:
  NH06, NH10, NH13, NH16, NH19, NH25, NH32,
- case UC-CC-LP.

EL7DP

Cleaning set consisting of:
- cleaning gun UC-EL,
- quick release coupling with a hose tail DN12 UC-QRC-C,
- 7 standard nozzles:
  NH06, NH10, NH13, NH16, NH19, NH25, NH32,
- case UC-CC-LP,
- container for catching projectiles UC-PC,
- set of standard cleaning projectiles:
  P007, P010, P012, P014, P016, P018 - 100 pcs. each
  P020, P022, P026 - 50 pcs. each.
  P033 - 40 pcs.
  P040 - 30 pcs.

It is recommended to match nozzles and projectiles according to the following table:

diameter	nozzle	projectile
3/16''	UC-NH06	UC-P007
1/4''	UC-NH06	UC-P010 or UC-P012
5/16''	UC-NH08	UC-P012 or UC-P014
3/8''	UC-NH10	UC-P014 or UC-P016
1/2''	UC-NH13	UC-P018 or UC-P020
5/8''	UC-NH16	UC-P022
3/4''	UC-NH19	UC-P026
1''	UC-NH25	UC-P033 or UC-P036
1.1/4''	UC-NH32	UC-P040 or UC-P045

The table above is of informative character.

If a hose was cut with an abrasive disk, a projectile with the diameter bigger than recommended should be used.

ULTRACLEAN devices for hose, assembly and pipe cleaning

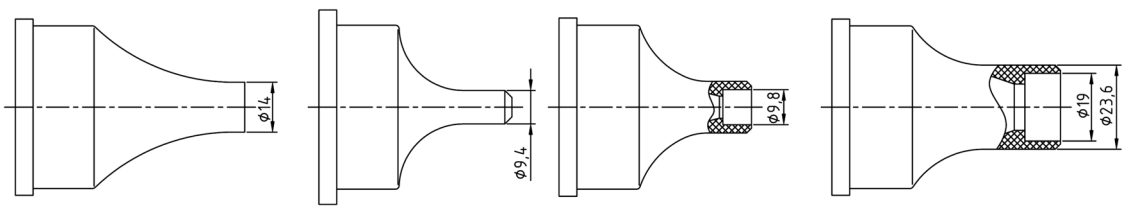
The ULTRACLEAN devices are used to clean:
- hydraulic hoses and hose assemblies during production,
- used hydraulic hoses and hose assemblies,
- pipes while making pressure assemblies,
- pipes in metal constructions (also as protection against corrosion),
- heat exchanger components,
- steam boilers,
- air conditioning systems,
- gun barrels,
- chemical and food industry systems.

Nozzle types

A wide range of nozzle types, offered by Tubes International, allows ULTRA CLEAN system to be used in many applications (cleaning hoses, pipes and other tubing types in practically all shapes and sizes).

For hoses (UC-NH...) - nozzles for hoses are placed inside hoses. They can be used for pipes, heavy wall pipes and couplings. It is the most popular type of nozzles.
JIC (UC-NJ...) - nozzles with connection ends adjusted to hoses and pipes with JIC female thread connection.
For pipes (UC-NT...) - nozzles are pushed on pipes. The seal is created between pipe end face and a lock inside the nozzle.
FFORX - nozzles designed for couplings with flat seal and sealing ring.
Big general purpose nozzle - nozzles similar to nozzles for hoses. Designed for diameters ranging from 55 mm (2.1/8'') to 90 mm (3.1/2'').Diameter size rises by 10 mm.

Exemplary nozzles



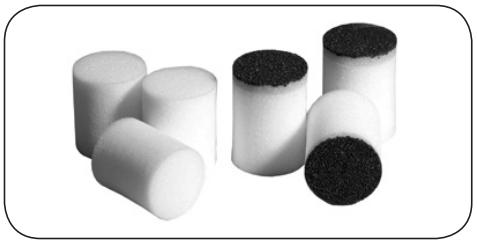
UC-NH16 UC-NJ06 UC-NT10 UC-NJ19/T19

Use Ultra Clean system to reduce application shutdowns, extend service life of filters and reduce the risk of premature damage of an installation due to impurities !!!

ULTRACLEAN devices to clean hoses, pipes and hose assemblies

Types of cleaning projectiles

Standard cleaning projectiles for the ULTRACLEAN devices are available in diameter range from 2 to 150 mm. The projectiles are shot into hoses, pipes or assemblies under pressure and clean their internal surface. The pressure is necessary as the diameter of projectiles is bigger by 20 ÷ 30% than the diameter of hoses, pipes or assemblies. Note: It is recommended to use the cleaning projectile to remove impurity reminders after the application of abrasive or grinding projectiles. In order to match nozzles with adequate projectiles the tables in a user manual have to be followed or experimentally determined.



Cleaning - for hoses and pipes; removes small particles of loose impurities.
Abrasive - for hoses, pipes and assemblies wherever a layer of scale, rust or other impurities sediment on the inside.
Grinding - pipes and assemblies with thicker layer of impurities, scale and rust.

O.D. [mm]	code			pack [pcs.]
	cleaning	abrasive	grinding	
2	UC-P002	-	-	100
3	UC-P003	-	-	100
4	UC-P004	-	-	100
5	UC-P005	-	-	100
6	UC-P006	UC-A006	UC-GR006	100
7	UC-P007	UC-A007	UC-GR007	100
8	UC-P008	-	-	100
10	UC-P010	UC-A010	UC-GR010	100
12	UC-P012	UC-A012	UC-GR012	100
14	UC-P014	UC-A014	UC-GR014	100
16	UC-P016	UC-A016	UC-GR016	100
18	UC-P018	UC-A018	UC-GR018	100
20	UC-P020	UC-A020	UC-GR020	50
22	UC-P022	UC-A022	UC-GR022	50
24	UC-P024	UC-A024	UC-GR024	50
26	UC-P026	UC-A026	UC-GR026	50
28	UC-P028	UC-A028	UC-GR028	40
30	UC-P030	UC-A030	UC-GR030	40
33	UC-P033	UC-A033	UC-GR033	40
36	UC-P036	UC-A036	UC-GR036	30
40	UC-P040	UC-A040	UC-GR040	30
45	UC-P045	UC-A045	UC-GR045	20
50	UC-P050	UC-A050	UC-GR050	20
55	UC-P055	UC-A055	UC-GR055	15
60	UC-P060	UC-A060	UC-GR060	15
65	UC-P065	UC-A065	UC-GR065	10
70	UC-P070	UC-A070	UC-GR070	10
75	UC-P075	UC-A075	UC-GR075	10
80	UC-P080	UC-A080	UC-GR080	10
85	UC-P085	UC-A085	UC-GR085	10
90	UC-P090	UC-A090	UC-GR090	10
95	UC-P095	UC-A095	UC-GR095	10
100	UC-P100	UC-A100	UC-GR100	10
110	UC-P110	UC-A110	UC-GR110	10
120	UC-P120	-	-	10
130	UC-P130	-	-	10
140	UC-P140	-	-	10
150	UC-P150	-	-	10

CLEAN SEAL system that prevents hose assemblies from dirt.

ULTRA CLEAN is the leader in contamination control solutions of flexible hose assemblies and rigid pipes. To fully protect hose assemblies after being cleaned, the producer introduced a new solution - clean seal capsules. This process utilizes heat shrink technology to encapsulate the end of a hose or tube assembly. Such solution eliminates recontamination that occurs when ill-fitting caps and plugs are forced onto assemblies, causing plastic particles to shear off into the hose or tube.

Clean seal capsules leave absolutely no particles or sticky surface. They perfectly protect the hose assemblies or pipes from contamination until they are removed. Removal includes griping the black pull tab, then ripping the pull tab upwards and finally slipping the clean seal capsule off the hose assembly or pipe. Clean seal capsules are single use and cannot be used again.

UC-CSS-230V

Clean seal system bench-top capsule applicator suitable to apply clean seal capsules to a hose or tube assembly. Equipped with a timer that ensures that air heater will turn itself off automatically (time frame to be set with accuracy to 1 minute)
Diameter range: from 20 mm to 80 mm of clean seal capsule outside diameter that allows to protect fittings from 1/4” to 2’’. Oversized shrink tunnel allows to apply multiple hose and pipe assemblies at once.
Electric drive: 230 V / 50/60 Hz.

UC-HL1910E

Industrial device (heat gun) with adjustable temperature control knob performed with the use of switch. Can be used with heat diffuser. Electric drive: 230 V / 50 Hz.

UC-1.5HD, UC-2.0HD

Heat diffuser (fitting) to be assembled on heat gun. Available in two sizes that depend on heat gun nozzle: UC-1.5HD 1.1/2’’ (38 mm), UC-2.0HD 2’’ (50 mm). Made of: AISI 304 stainless steel.

UC-HG-STAND

Flexible stand for heat gun UC-HL1910E equipped with a so called „sucker” that enables installation on any smooth surface. Flexible construction ensures work ergonomics during assembly of clean seal capsules to hose or pipes assemblies.

Heat shrink capsules

code	dimensions	fitting hex sizes	code	dimensions	fitting hex sizes
UC-CSC-2025P	20x25 mm	12 ÷ 18 mm	UC-CSC-3850P	38x50 mm	30 ÷ 32 mm
UC-CSC-2540P	25x40 mm	18 ÷ 22 mm	UC-CSC-4660P	46x60 mm	32 ÷ 41 mm
UC-CSC-2840P	28x40 mm	22 ÷ 24 mm	UC-CSC-5260P	52x60 mm	36 ÷ 47 mm
UC-CSC-3140P	31x40 mm	24 ÷ 27 mm	UC-CSC-6760P	67x60 mm	46 ÷ 60 mm
UC-CSC-3440P	34x40 mm	27 ÷ 30 mm	UC-CSC-8060P	80x60 mm	60 ÷ 72 mm